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(54) Title: A METHOD AND SYSTEM FOR PUBLISHING AND ACCESSING RICH CONTENT VIA A WIRELESS DEVICE

(57) Abstract: A system and method for enabling a user to generate web-type content from a mobile device using messaging system data transfer protocols, this content being structured into addressed sites comprising pages, links and additional sites. Further, the system comprises a unique-namespace registering system for site addressing and ownership by individual users.

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TITLE

A METHOD AND SYSTEM FOR PUBLISHING AND ACCESSING RICH CONTENT VIA A WIRELESS DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001]This application claims priority to U.S. Provisional Application Number 60/360,575, filed 03/04/2002, and U.S. Provisional Application Number 60/360,865, filed 03/04/2002, both of which are herein incorporated by reference in their entireties.

BACKGROUND OF THE INVENTION

[0002] I.   Field of the invention

[0003] The present invention relates generally to the field of mobile radiotelephony, and particularly to the creation of accessible content employing a mobile terminal (i.e., wireless) device.

[0004] II. Description of related art

[0005]The usage of mobile radiotelephony has increased enormously in many parts of the world during the past decade, and mobile telephones have become commonplace possessions. As a consequence of this, the coverage areas of the mobile radio networks have increased, and in many countries, most of the inhabited areas experience mobile radio coverage. This provides an excellent opportunity for the supply, and sharing of general information by many people at a time. Many of the mobile radiotelephony standards used around the world provide data services as well as speech services.

[0006]In the early 1990s, as a result of the growing popularity of digital wireless technology, a standard for digital wireless networks was introduced in Europe. That standard, now known as the global standard for mobiles (GSM), included a service called short messaging service (SMS). An SMS system allows transmission of short messages, typically up to 160 characters, to and from communication devices, e.g., cellular telephone handsets, telephones or computers with appropriate modems. SMS is currently implemented on digital wireless/mobile networks, such as a PCS network based on the GSM standard, code division multiple access (CDMA) and/or time division multiple access (TDMA) methods.

[0007]Short message services are advantageous over text based paging services because of the capability of bi-directional communication. Such bi-directional communication allows, for example, notification to the originating device of the success or failure of the

[0008]An SMS network typically includes a Short Message Service Center (SMSC) which acts as a store-and-forward mechanism providing guaranteed delivery of short messages to a subscriber, even if the subscriber is inactive when the message was transmitted, by delivering the short messages once the subscriber becomes active. Delivery of all short messages is guaranteed regardless of whether or not the intended subscriber is "on-line" because the transmitted short message is stored within the SMS network and delivered to the intended subscriber from their assigned SMSC when the subscriber becomes available.

[0009]In operation, an SMSC receives a short message from any source; and it is to be understood that a mobile subscriber or any other source may originate a short message intended to be delivered to a particular subscriber. When the particular subscriber is not available because, for example, the mobile telephone is turned off or is outside of the service area of the SMS network, the attempt to deliver the short message at that time will fail. In this case, the short message will be retained in the SMS network for a later delivery attempt. Thereafter, when the subscriber finally becomes available, e.g., has activated their means of receiving the message or has moved into the service area of the SMS network, the relevant portions of the network (e.g., the Mobile Switching Center (MSC) and the Home Location Register (HLR)) notify the SMSC to initiate delivery of the stored (i.e., previously failed) short messages.

[0010]Due in part to this reliability, a variety of services have been introduced using SMS networks including, for example, integrated electronic mail and fax, integrated paging, interactive banking, and information services such as stock quotes and airline schedule delivery, and other services which would be apparent to one of ordinary skill in the art.

[0011]Naturally, wireless solutions to date have allowed a subscriber to transmit data to a handset from a web site. The Wireless Application Protocol (WAP) attempts to standardize a mechanism for two-way communications. WAP capable mobile devices rely on pushing data to a mobile device, or on pulling data and content, which is published on servers in WML format. The use of WAP protocol communications requires that a special browser be loaded on the mobile device, and requires the user to enter into a dedicated `browser mode` to interact with 2-way services.

[0012]Currently, platforms exist which enable rich content, or WAP-like content, addressed sites consisting of pages formatted in a markup language such as WML that contain text and menus of links to other pages, to be delivered over SMS. These platforms also provide service, device management and billing capabilities, which are both large and complex, and increase costs while further complicating the wireless network.

[0013]Despite the existence of these platforms, and due in part to the limiting nature of the available user interface on most mobile communications devices, carriers typically

dictate what content available to their users in a form similar to that of walled content gardens. These walled gardens are typically created, for example, by a web-based application on the provider's side, for retrieval by the subscriber through a specified menu-based interface that is additionally supplied by the provider. The provider typically insures that only authorized users have access to these cost-based applications through the provision of licenses within the software application itself.

[0014]Thus a need exists for a system that would enable users more flexible access to content, and content creation, while additionally enabling providers to open up content to each other, thus freeing content exchange from a WAP based system.

SUMMARY OF THE INVENTION

[0015]A system for providing content interface between a mobile terminal device and a server is disclosed. The mobile terminal device may typically include a Personal Digital Assistant, or a pager, and preferably a mobile handset, including a cellular phone or another mobile terminal device that includes a processor and an input component in electronic communication with the processor for a user to enter user input. The mobile terminal device also includes a display in electronic communication with the processor that displays information to the user. Memory is also included in electronic communication with the processor for storing data, and may be in the form of memory, which is permanently associated with the mobile terminal device, or in preferred embodiments is in the form of a Subscriber Identity Module (SIM).

[0016]Preferred embodiments of the system also include a user interface software package, that is preferably resident on the SIM card of the user. Further embodiments of the system include those in which the user interface is resident to the operating system memory of the mobile terminal device.

[0017]Further, preferred embodiments of the user interface provide function to the user that include the ability to compose a request for content stored within the system, view any received content from the system, and to compose and transmit content in the form of a message to be stored in memory within the system. The user interface enables users to access content on the servers of the system and other systems by transferring requests for content to a network of the inventive system using a messaging service protocol, widely known in the art. Other preferred features of the user interface enable a request generated by the user to prompt a server initiated delivery of content to an alternate user of the inventive system, or to users of systems with electronic access to the inventive system.

[0018]Preferred embodiments of the message service protocol may be in the form of a multimedia messaging service, or an instant messaging service protocol, and in the preferred embodiment the messaging system is the short messaging service protocol.

[0019]The inventive system further includes a unique-addressing system for the addressing of content generated by users to unique locations within the memory of the

servers, thereby e██ing the access, or retrieval of specific content retained on the servers of the system, and also enables the accessing of content by any outside systems due to the uniqueness of the location mapping.

[0020]The system further comprises at least one server having a processor, and content storage device, preferably in the form of a hard-drive or other memory storage facility in electronic communication with the processor. In preferred embodiments of the invention, the memory would retain user-defined mappings, which map content to locations within the memory. Further, the server is preferably in electronic communication with at least one network registry which is capable of monitoring the access of content. Another aspect of preferred embodiments of the inventive system employ a J2EE-based application server system as a preferred server system.

[0021]In preferred embodiments of the inventive system the mobile terminal device is a cellular phone, and may be a cellular phone that is described accurately as a Phase 2+ cellular telephone. Preferred embodiments of the cellular telephone are Internet browser enabled, and are in compliance with the Global System for Mobile Communications (GSM) which is widely known in the art. Preferably the cellular telephone will have a Subscriber Identity Module (SIM).

[0022]Another preferred embodiment of the invention would include a SIM-based Wireless Internet Browser (WIB), wherein said WIB comprises the SmartTrust DP platform commonly used and known in the art. In other embodiments of the system, the WIB may be the GemXplore platform widely known in the art.

[0023]The invention also discloses an inventive method for a user to generate content on a server. The inventive method includes composing a message, preferably in the form of a text message entered to a mobile terminal device. The preferred mobile terminal device having a user interface software package that enables the user to request, view and compose content in addition to other preferred features. The inventive method further includes the transmission of the message to a network using a preferred messaging system protocol, preferred embodiments of which may be in the form of a multimedia messaging service, or an instant messaging service protocol, and in further preferred embodiment the messaging system is the short messaging service protocol. Further, the software is capable of breaking up a single message that, for example, is too long to transmit via the messaging system protocol, into a series of messages which are formatted to the messaging system protocol, prior to transmission. Additionally, this breaking up of the message may happen from the server side, wherein the content requested by a user is too large to send in one message, the software may break up the content into smaller pieces, capable of transmission utilizing the message system protocol, and combine them, or display them in a form useable by the user following transmission to the user.

[0024]A preferred embodiment of the network would include hardware and software capable of receiving and converting the message to a form which is an electronic form readable and useable by a server. A preferable server of this method will employ one or

by the user to pro🌀 a server initiated delivery of content to an 🌑mate user of the inventive system, or to users with electronic access to the inventive system.

[0032]Still a further aspect of the invention discloses a unique-addressing system. The unique addressing system of the invention preferably comprises a network having hardware and software, and at least one server in electronic communication with the network associated with the system. Preferably the network includes a registry and a content storage device. Preferably the registry includes a unique addressing system where at least some of the content stored on the content storage device includes user-defined mappings which associate a unique identifier to a specific portion of content.

[0033]The software enables electronic communication between components associated with the network and uses the unique-addressing system thereby allowing the receiving, transmitting, and converting of requests sent through said network into a form readable by the server. Further, the access to mappings associated with content within a server is achieved by generating an electronic request for the content from a server wherein the inventive system employs a messaging system protocol to transfer and receive the response from the network. In some embodiments of the invention, this messaging system protocol may be a multimedia messaging system protocol, or another messaging protocol used in the art, and preferably it is the short messaging system protocol.

[0034]Another aspect of the invention discloses a system of networked namespace registry databases. This network preferably includes a plurality of servers in electronic communication, wherein each server includes a namespace registry database. The network also includes software which provides restrictive access to at least one namespace registry database, and a user interface by which each namespace registry database may be controlled by a respective network operator. In preferred embodiments of the network the network operator is a cellular network operator. The networked namespace registry databases provide for a mobile site name to be registered with a namespace registry database by a user interfacing with a server via a messaging system protocol. Preferably, each said namespace registry database comprises ownership details for at least one mobile site name, and a mapping of the mobile site name to a respective storage location within a server in electronic communication with the network. The inventive system allows for users to have access to mobile site names registered in any of the plurality of namespace registry databases in electronic communication with the network. In some embodiments of the invention, the messaging system protocol used for communication with the system may be a multimedia messaging system protocol, and preferably it is the short messaging system protocol.

[0035]In accordance with one aspect of the inventive system, the software guarantees the uniqueness of said mappings within said network.

[0036]In accordance with another aspect of the inventive system, electronic communication between said plurality of servers occurs via web communication protocols.

[0037]In accordance with a further aspect of the inventive system, software provides restrictive access to the network by restricting information exchange at the network level.

[0038]In accordance with a further aspect of the inventive system, software provides restrictive access to the network by restricting information exchange at the user interface level.

[0039]In accordance with a further aspect of the inventive system, software provides restrictive access to the network by omitting namespace information from a namespace registry database associated with the network.

[0040]In accordance with a further aspect of the inventive system, software provides restrictive access to the network by implementing applications which deny the accessibility of a namespace registry database in electronic communication with the network.

BRIEF DESCRIPTION OF THE DRAWINGS

[0041]FIG 1. is a schematic illustration showing the interconnected nature of the various parts of the inventive system.

[0042]FIG 2. is an overview sequence diagram illustrating the generation of content on a remote server from a mobile terminal device.

[0043]FIG 3. is a series of screenshots highlighting the functionality of the user interface.

[0044]FIG 4. is another series of screenshots highlighting the functionality of the user interface.

[0045]FIG 5. is a further series of screenshots highlighting the functionality of the user interface.

[0046]FIG 6. is a another series of screenshots highlighting the functionality of the user interface

[0047]FIG. 7 is a diagram outlining the interconnectedness of a plurality of server namespace registries.

[0048]FIG 8. is a detailed diagram which shows the mapping of a unique namespace to a specific memory location on a server local to a user.

DETAILED DESCRIPTION OF THE INVENTION

[0049]The general architecture of an embodiment of the invention is represented in Fig. 1. The inventive system 105, includes a mobile wireless network 125 which is schematically illustrated to provide wireless communication to users of a mobile terminal device 110 of which a preferred embodiment is a cellular phone, compatible with the Global System for Mobile (GSM) Communication standards. In other embodiments of the invention the mobile terminal device 110 might be a Portable Digital Assistant (PDA), a pager, or another wireless device having wireless communications capabilities and a capacity for enabling a user interface. A preferred mobile terminal device 110 typically includes a Wireless Internet Browser 113 and a storage device 115 which is preferably a Subscriber Identity Module (SIM), and may additionally include on board memory 116. The mobile terminal device 110 is in wireless communication with network operator 130 via common telecommunications hardware 125. The wireless communication of the invention occurs in preferred embodiments via the Simple Messaging System (SMS) protocol, which is known in the art. Other embodiments of wireless communication may be another form of messaging service protocol such as the Multimedia Messaging Service (MMS) protocol or the Instant Messaging (IM) service protocol. The network operator 130 comprises a Short Message Service Center (SMSC) 135 or another center for relaying and handling messages sent via a messaging service protocol, and a computer processor 145. This SMSC 135 is in electronic communication with a Wireless Internet Gateway (WIG)140. The Wireless Internet Gateway 140, such as a SmartTrust DP, or Gemplus platform, allows for the requesting, pushing, or provisioning of information sent to and from server 150 which is in electronic communication with network operator 130 via a local area network 147, typically employing HTTP as a communication protocol therein. Server 150 has a registry 155 and a content storage device 157, and a computer processor 120. Additionally, the server 150 may be in electronic communication with a network 175 such as the Internet, or any number of other servers.

[0050]Figure 2 is a schematic flow diagram which outlines a process may typically occur in the inventive method described herein. A user of the inventive system will desire to create content on a server via a mobile terminal device, and begin at step 205. In step 207, the user will be queried as to whether or not the user has a registered account on the system and prompted to select the appropriate response. If the user does not have an account the user interface will proceed to step 210, wherein the user is prompted to choose a password, and enter the password to the system. The user then proceeds to step 213 wherein the system will register the password entered, and create the user's account, thereby allowing the user protected access to the content that the user may create on this account. Should the user already have an account, the user will proceed to step 215, wherein the user will enter the password to the system, and proceed to step 225, wherein the system will prompt the user to confirm the password by re-entering the password to the system. The user then proceeds to step 230, wherein the user may enter the name of a site which the user would like to create, or the user may enter the name of an already existing site that the user wishes to edit. At step 240, the site name will be confirmed by the system, and will return the user to a prompt to enter the site name at step 230, should

the site name not⬤ confirmed. If the site name is confirmed i⬤ep 240, the user proceeds to step 245, wherein the user may enter any text, or content that the user would like to have retained at that site by the system. The user then may transmit the message in step 255, after which the user will typically be prompted to either add a new message or to continue on. If the user decides to add another message, the process will return the user to step 230. If the user decides not to add another page, in step 280 the user interface will prompt the user to decide if they would like to add or create a link to the site. If the user decides to create a link to the site, the process will proceed to step 285 enabling the user to create a link to the site, or perhaps to store the link to the site in a memory on the users mobile terminal device for ease of access to the site later. After the user creates the link, or if the user decides not to create a link, the process will continue to step 295, where the user interface will ask the user to decide if they would like to view the site, or sites, which they have created. If the user decides to view a site the user will proceed to step 270, where they may view the sites they have previously created. At the conclusion of which the user will be at the end , step 275, of the method. This method is shown as a typical way in which the user might use the inventive system, and also may employ the inventive method. Several options, however, are available to the user through the user interface which is diagramed in Figures 3, 4, 5, and 6.

[0051]Figure 3 highlights a preferable user interface for the system and method described herein. Illustration 305, is indicative of what the user might see when they initially access the system. There may be several features available to the user, and the user may select them from a menu by employing the existing interface of buttons provided by the mobile terminal device. Illustration 310, shows a typical message that the user interface may have to serve as a reminder to the user. These messages can be customized for the user, and may also be inserted at points of the user interface deemed necessary and useful for interaction with the inventive system. Illustration 315, shows the continuation of the message initially in illustration 310, thus enabling the user interface to provide more information to the user than is able to be displayed in the confines of one mobile terminal screen, while simultaneously prompting the user to enter a password, the remainder text of which is illustrated in 320. Illustration 325 shows what a user might see after having entered a password to the phone, typically a '*' or other symbol is employed in the place of the text that the user may input, for security reasons. This entering of the password may be occurring during step 215 of Figure 2.

[0052]Figure 4 further highlights the features of a preferable user interface for the system and method described herein. Illustration 430 shows the confirmation of a password entered into the system, this may occur during step 225 of Figure 2, again, typically a '*' or other symbol is employed in the place of the text that the user may input, for security reasons. Illustration 435 shows a typical message the user will receive as a prompt for the next step; in this case the user interface asks the user to choose a site name. The continuation of the message from illustration 435 is shown on illustration 437. Again, showing the ability of the user interface to produce messages that provide more information than the constraints of the mobile terminal device screen may show. The user then may enter information to the user interface as shown in 439, as outlined in step

230 of Figure 2, t●cally employing the architecture of the mobil●erminal device to communicate with the user interface.

[0053]Figure 5 further highlights the features of a preferable user interface for the system and method described herein. Illustration 540 shows a typical message that may be received by the user during step 240 of Figure 2, wherein the site name chosen by the user is confirmed to be available by the system. Illustration 543 shows a prompt to the user for the next step of a process which will include entering text to a registered page, corresponding to what a user might see during step 245 of the method illustrated in Figure 2. Illustration 545 is an example of text a user may enter to the system by employing the existing architecture of the mobile terminal device the user is using. Illustration 547 shows what the user may see when prompted for a decision. In the Illustration of 547 the decision corresponds to what a user may see during step 250 of Figure 2.

[0054]Figure 6 further highlights the features of a preferable user interface for the system and method described herein. Illustration 650 shows a message generated by the system to confirm to the user that an action has taken place. In the case of 650, the message may be typically what a user might see at the conclusion of step 255 of Figure 2. Illustration 655 and 660 show a typical message that the user may see should they decide in step 250 of Figure 2, to create further content. Illustration 665 shows the text name of other content generated by the user during a method that may be similar to the one outlined in Figure 2, corresponding to a repeat of step 230, wherein the user may not create new content with the same textual name as previously created content. Additionally, the new content may be linked to or located within a previously created named-site. Further, if the user has access to a site, or content created by another user of the system, the user may enter text, or add links, or link to that site. Illustration 670 shows typically what a user may see when prompted to enter text. Illustration 680 shows text entered by the user, typically employing the existing architecture of the mobile terminal device.

[0055]Figure 7 diagrams an interconnected network of servers containing namespace registries, and the relationship to the user of the inventive system. A user would interface the system by employing a mobile terminal device 750, in wireless communication with a server 711 via existing telecommunications hardware 760, as outlined in Figure 1. Server 711, contains a content storage device 722 and a namespace registry 732. The user of mobile terminal device 750, typically has access to the content within content storage device 722 in server 711, as the namespace registry 732, most local to the user, will typically hold registry information for the user. The network of Figure 7, illustrates the interconnectedness of namespace registry 732, with namespace registries 723, 721, and 730. Each namespace registry 723, 721, and 730 is also in communication with one another. Each namespace registry 723, 721, and 730 also has associated with it, a content storage device 733, 731, and 720 respectively, both of which namespace registry, and content storage device are located within a respective server 713, 712, and 710. The interconnection of the namespace registries allows access, by a user, via wireless terminal device, to content stored in any of the content storage devices wherein the content has a registered name in a format accessible to the local namespace registry of the user 732.

[0056]Figure 8 shows in greater detail the system involved with a user accessing content stored within a server. The user will access the system via a wireless terminal device 810. The wireless terminal device 810 is in wireless communication to the system via existing telecommunications hardware 820, which is in electronic communication with local server 870. Local server 870 contains local registry 850, and local content storage device 860. Users may define a unique namespace identifier 830, and then later compose content to be stored within local content storage device 860. Local registry 850, functions to map the unique namespace identifier 830, to a specific memory location 840 contained within local content storage device 860. The local registry 850 of the system may also be in electronic communication with a plurality of other registries, as shown in Figure 7. Thus a user may request a unique namespace identifier 830, from the system which is not located within local content storage device 860, but rather is located on a server in electronic communication with the system. The inventive unique-addressing system allows each local server to uniquely map the contents of its respective local content storage device, and to maintain the uniqueness of the mapping throughout the system, such that any user of any local server may remotely access content located within a remote server.

[0057]It is an object of the invention to enable a user to register one or more permissible mobile site address ranges, herein referred to as mobile web sites, uniquely identified on a server, from a mobile terminal device, using the a system similar to that of Figure 1. A user interface further enables a user to then create, edit, and view content of their mobile web sites, also via the same mobile terminal device, employing preferably the Simple Messaging Service (SMS) protocol or a similar messaging service by employing existing telecommunications equipment for data transport between the mobile terminal device and network of servers.

[0058]An object of the inventive system is to enable a mobile community and a mobile publishing service that gives mobile subscribers the power to create their own personalized and secure content directly from Phase 2+ mobile phones typically using the Short Messaging Service (SMS) protocol.

[0059]The robust features of the inventive system will allow mobile terminal users to view, create and link web like, text-based interactive information using a messaging system protocol to transmit information to a network of servers. As a result, network operators can take advantage of the popularity of messaging to generate additional messaging service traffic by deploying this inventive system.

[0060]The uniquely identified nature of each user's uniquely-addressed mobile site address name, or mobile web site, are analogous to a website and/or WAP-enabled site wherein a website is created by a user employing, for example, the World Wide Web, and is registered to a DNS name unique to the Internet, thereby enabling access to other users of the world wide web.

[0061]It is a further object of the invention to provide architecture that allows the user of the mobile terminal device to readily request content they have previously viewed by storing in a memory feature of the mobile terminal device i.e. a Subscriber Identity Module, or SIM card, or other onboard memory, a link to the content the user desires. Further, the architecture may also be used to store links to often-requested content via a 'Favorites' component.

[0062]In conjunction with the rest of the architecture, the user interface enables the user of the mobile terminal device to search content stored in the architecture of the inventive system or on third party servers in electronic communication with the inventive system. The user interface may be stored in the mobile terminal device itself or in servers in communication with the system.

[0063]A further object of the invention allows a content provider to register one or more mobile web site domain names via a World Wide Web user interface. Content providers can then place content on their own servers, which is assigned a mobile web site name, and thereby enable access by users of the inventive system. This content may be written in a format specific to the Wireless Internet Gateway (WIG) of the inventive system. If this content is published in a format other than a correct format for the inventive system, a Transcoding Gateway resident on a server allows other standard content formats – such as WML, HTML, and so forth – used by content providers to be transcoded into a format acceptable to the WIG. In this way, a far wider range of content is accessible to the user of a mobile terminal device than would otherwise be possible. The Transcoding Gateway acts as a form of proxy server between the WIG and the content providers. In the context of the invention content, which is transferred and referenced by the inventive systems, preferably comprises well-known forms of clearly defined modes of publishing, reading, linking, and formatting data, all of which would fall within a preferred embodiment of a mobile site.

[0064]In the context of the invention, content that is stored on a server or other remote location from the user, may be retrieved readily via the user interface. The invention allows for the transformation of the content on the fly: that is, if the content is stored on a server, with access to the network, and resides in a location retrievable by a user, the system will transmit the content to the user, and if need be, transform the content to the form employed by the user interface, and the system to facilitate transfer. For example, if published content exists in an HTML format initially, when a request for content is generated by a user, the content is transformed into WML, and other similar encoding and format changes are made to the content such that it will be transferred to the user over the messaging system protocol, and will be readable by the user interface. Further, the limiting nature of a messaging system protocol will dictate the size of a message that will be sent to and from the user.

[0065]The inventive system enables an amount of information which is larger than the size allowed to be transmitted normally over the messaging system protocol, to be transmitted by transmitting requested content in a series of short messages, wherein each message in the series will fall within the constraints of the messaging system protocol

employed to trans⬤ the messages, and when combined make up⬤e entirety of the requested content.

[0066]Additionally, this system allows for the filtering of transmitted content during the transcoding phase. For instance profanity could be deleted, or the content may be replaced entirely with a message warning the user about the content, or restricting the viewing of the site in the case, for example, of inappropriate material. Further, the transcoding allows for the content to be translated to another language before the transmittal of the content to the user.

[0067]The invention provides a user interface for the administration of a network system by an operator. This user interface, having capabilities set forth herein, enables the capabilities of, but not limited to, the searching for, and browsing of content stored on a server, of which the server will typically be local to the network operator, but may as well be located remotely and in electronic communication with the local server. Further, editing of content may take place, again, the content may be local, or reside on a server in electronic communication with the network operator. The network operator user interface provides the abilities to amend append, remove change and manage user information for users interfacing with the network, or registering mobile sites on a local or remote server.

[0068]User-defined content may take the form of a mobile site wherein a user registers a unique mapping to a server namespace, and wherein only the user may create, edit or remove content from the mobile site. A mobile site may take the form of a site analogous to a Wiki - commonly known in the art - wherein a user registers a unique mapping to a server namespace, and provides access to any user of the inventive system to create, edit or remove content from the mobile site. A mobile site may take the form of a site analogous to a Weblog, a form of a personal yet public web diary that can be read by others (also known as Blogging), herein referred to as a Moblog, wherein a user registers a unique mapping to a server namespace, and wherein only the user may create, edit or remove content from the mobile site, wherein the content is created within a strict log format: e.g. the newest page goes to the top of this list, and pages within the namespace are ordered by date or time published, additionally, any user of the inventive system may view or produce link that reference the mobile site.

[0069]The inventive system further enables the user to create mobile sites in a format analogous to that of a Bulletin Board, or Forum, commonly known in the art. A user may register a mobile site, and allow for anyone to access, view, and add content to the site. The site owner may edit or remove each new content added to the site, as the content is typically created in a strict format wherein the users may create replies to other content, quote existing text, and the individual pages on the site may be flagged or identified with the creators identification, or the date and time.

[0070]The inventive system further provides for the password protection, or general security of a mobile site. Any content created by a user may require the initial submission of a password via the inventive system, prior to the viewing of the content

residing in a speci●l namespace. In addition to their other prope●, content such as Wikis, Moblogs, and Bulletin boards, to name a few, can be secure in their content in addition to the other properties associated herein.

WHAT IS CLAIM● IS:

1. A system for providing content interface between a mobile terminal device and server, comprising:

a mobile terminal device;

a server comprising a content storage device having a plurality of content where at least some of said content comprises a user-defined mapping wherein said mapping associates a unique identifier with a specific portion of content;

a user interface which provides access to content retained within said content storage device, wherein said user interface provides functions for each user to at least (a) compose a request for said content, (b) view received content, and (c) compose and transmit content in the form of a message of which said content will be stored on said server;

a network comprising hardware and software, and having capabilities comprising receiving, transmitting, and converting requests sent through said network into a form readable by said server;

a unique addressing system wherein said unique-addressing system functions to uniquely map user-defined information to specific content;

wherein said software enables electronic communication within said network;

wherein said server is in electronic communication with at least one network registry; and

wherein users access said content through said user interface by generating the request for said content from said server wherein said request transferred and the response is received from the network via a messaging system protocol.

2. The system of Claim 1, wherein the mobile terminal device is a cellular telephone.

3. The system of Claim 1, wherein the mobile terminal device is a phase 2+ wireless internet browser-enabled cellular telephone in compliance with the General System for Mobile Communications.

4. The system of Claim 1, wherein said mobile terminal device is a SIM-bearing General System for Mobile communications compliant mobile telephone.

5. The system of Claim 1, wherein the mobile terminal device comprises a personal digital assistant.

6. The system of Claim 1 wherein said server is a J2EE-based application server system.

7. The system of Claim 1, wherein said mobile terminal device further comprises a SIM-based wireless internet browser, wherein said wireless internet browser comprises the SmartTrust DP platform.

8. The system of Claim 1, wherein said mobile terminal device further comprises a SIM-based wireless internet browser, wherein said wireless internet browser comprises the GemXplore platform.

9. The system of Claim 1, wherein said user interface is resident on a subscriber identity module card.

10. The system of Claim 1, wherein said user interface is resident on an operating system immediately associated with said mobile terminal.

11. The system of Claim 1, wherein the user interface is resident on memory associated with said mobile terminal device.

12. The system of Claim 1, wherein said messaging system protocol comprises a simple messaging system protocol.

13. The system of Claim 1, wherein said messaging system protocol comprises a multimedia message service protocol.

14. The system of Claim 1, wherein said software enables said request generated by said user to prompt a server initiated delivery of content residing on said server to an alternate user.

15. The system of Claim 1, wherein said software enables said request generated by said user to prompt a plurality of server initiated deliveries of said content to a plurality of addresses.

16. A method for generating content on a server comprising:

composing a message on a mobile terminal device, wherein said mobile terminal device comprises a user interface that provides functions for each user to at least (a) compose a request for content, (b) view received content, and (c) compose and transmit content;

transmitting said message to a network via a messaging system protocol, wherein said network comprises hardware, software and having capabilities comprising receiving, transmitting, and converting said message into a form readable by the server;

wherein said softw⬤ interprets the message into transmittable ⬤nt comprising a format employed by said messaging system protocol, and facilitates the transfer and storage of said transmittable content to a content storage device; and

wherein said server utilizes a unique-addressing system wherein said unique addressing system functions to uniquely map user-defined information to specific content retained within the server.

17. The method of Claim 16, wherein said messaging system protocol comprises a simple messaging system protocol.

18. The method of Claim 16, wherein said messaging system protocol comprises a multimedia message service protocol.

19. The method of Claim 16, wherein the mobile terminal device is a cellular telephone.

20. The method of Claim 16, wherein the mobile terminal device is a phase 2+ cellular telephone in compliance with the General System for Mobile communications.

21. The method of Claim 16, wherein said mobile terminal device is a SIM-bearing General System for Mobile communications compliant mobile telephone.

22. The method of Claim 16, wherein the mobile terminal device comprises a personal digital assistant.

23. The method of Claim 16, wherein said content comprises user-specified addresses within said server.

24. The method of Claim 16, wherein said server is a J2EE-based application server system.

25. A system for creating content on a server comprising:

a mobile terminal device comprising a user interface, wherein said user interface provides access to content retained within a content storage device, wherein said user interface provides functions for each user to at least (a) compose a request for said content, (b) view received content, and (c) compose and transmit content in the form of a message of which said message will be stored on said server;

a unique-addressing system wherein said unique addressing system functions associate a unique identifier with specific content; and

wherein said user ▬▬rface provides access to said content by generating a request for said content from said server, wherein said request is transferred and a response is received from a network in electronic communication with said server, via a messaging system protocol.

28. The system of Claim 25, wherein the mobile terminal device is a cellular telephone.

29. The system of Claim 25, wherein the mobile terminal device is a phase 2+ cellular telephone in compliance with the General System for Mobile communications.

30. The system of Claim 25, wherein said mobile terminal device comprises a SIM-bearing, General System for Mobile communications compliant mobile telephone.

31. The system of Claim 25, wherein the mobile terminal device comprises a personal digital assistant.

32. The system of Claim 25, wherein said server is a J2EE-based application server system.

33. The system of Claim 25, wherein said mobile terminal device further comprises a wireless internet browser, wherein said wireless internet browser comprises the SmartTrust DP platform.

34. The system of Claim 25, wherein said mobile terminal device further comprises a wireless internet browser, wherein said wireless internet browser comprises the GemXplore platform.

35. The system of Claim 25, wherein the user interface is resident on an application download server.

36. The system of Claim 25, wherein the user interface is resident on memory associated with said mobile terminal device.

37. The system of Claim 25, wherein said messaging system protocol comprises a simple messaging system protocol.

38. The system of Claim 25, wherein said messaging system protocol comprises a multimedia message service protocol.

39. The system of Claim 25, wherein said software enables said request generated by said user to prompt said server initiated delivery of content residing on said server to an alternate user.

40. The system of Claim 25, wherein said content is stored on said server in a WML format.

41. A system of uniquely mapped content addresses comprising:

software capable of providing and associating a unique mapping to data retained on one
of many content storage devices in electronic communication with one another, and
wherein said software maintains the unique nature of said mapping with respect to the
data stored in these content storage devices;

a user interface wherein said user interface provides access to content retained within said
content storage device, and wherein said user interface provides functions for each
user to at least (a) compose a request for said content, (b) view received content, and
(c) compose and transmit content in the form of a message of which said content will
be stored on said content storage device;

wherein said request for content is generated by the referencing of said unique mapping
via said user interface; and

wherein said request for said content is transmitted to said content storage device via a
messaging system protocol.

42. The system of Claim 41, wherein said software enables said request generated by said
user to prompt a server initiated delivery of content residing on said server to an alternate
user.

43. The system of Claim 41, wherein said software enables said request generated by said
user to prompt a plurality of server initiated deliveries of said content to a plurality of
users.

44. The method of Claim 41, wherein retaining said information on said server wherein
said server comprises a memory, comprises addressing said information to an allocation
of said memory on said server.

45. The system of Claim 41, wherein said messaging system protocol comprises a simple
messaging system protocol.

46. The system of Claim 41, wherein said messaging system protocol comprises a
multimedia message service protocol.

47. A unique-addressing system comprising:

a network comprising hardware and software;

at least one server in electronic communication with said network comprising a registry
wherein said registry comprises a unique addressing system, and a content storage
device having a plurality of content where at least some of said content comprises a
user-defined mapping wherein said mapping associates a unique identifier with a
specific portion of content;

wherein said unique-addressing system functions to uniquely map user-defined
information to specific content;

wherein the uniqueness of each mapping is guaranteed by said registry;

wherein said software enables electronic communication between components
comprising said network;

wherein said software having capabilities comprising receiving, transmitting, and
converting requests sent through said network into a form readable by said server;
and

wherein access to mappings associated with content within a server is achieved by
generating an electronic request for said content from said server wherein said request
is transferred to and the response is received from the network via a messaging
system protocol.

48. The system of Claim 47, wherein said messaging system protocol comprises a simple
messaging system protocol.

49. The system of Claim 47, wherein said messaging system protocol comprises a
multimedia message service protocol.

50. A system of networked namespace registry databases comprising:

a plurality of servers in electronic communication, wherein each server comprises a
namespace registry database;

software which provides restrictive access to at least one namespace registry database;

a user interface by which each namespace registry database may be controlled by a
respective network operator;

wherein each said namespace registry database comprises ownership details for at least
one mobile site name, and a mapping of said mobile site name to a respective storage
location within a server in electronic communication with said network;

wherein said mobile site name is registered with said namespace registry database by a user interfacing with said server via a messaging system protocol; and

wherein users have access to mobile site names registered in any of the plurality of namespace registry databases in electronic communication with said network.

51. The system of networked namespace registry databases of Claim 50, wherein said software guarantees the uniqueness of said mappings within said network.

52. The system of networked namespace registry databases of Claim 50, wherein said messaging system protocol comprises a simple messaging system protocol.

53. The system of networked namespace registry databases of Claim 50, wherein said messaging system protocol comprises a multimedia message service protocol.

54. The system of networked namespace registry databases of Claim 50, wherein said electronic communication of said plurality of servers occurs via web communication protocols.

55. The system of networked namespace registry databases of Claim 50, wherein said software provides said restrictive access by restricting information exchange at the network level.

56. The system of networked namespace registry databases of Claim 50, wherein said software provides said restrictive access by restricting information exchange at the user interface level.

57. The system of networked namespace registry databases of Claim 50, wherein said software provides said restrictive access by omitting namespace information from a namespace registry database.

58. The system of networked namespace registry databases of Claim 50, wherein said software provides said restrictive access by implementing applications which deny the accessibility of a namespace registry database in electronic communication with said network.

59. The system of networked namespace registry databases of Claim 50, wherein said network operator comprises a cellular network operator.

Fig. 1

170

105

PC / DESKTOP STATION

STANDARD WEB BROWSER

150

SEARCH

155

156

157

HISTORY

FAVORITES

NETWORK 175

120

110

116

115

SIM

113

VIPMobile WriteUp!
View Site
Create Site
My Favorites
My History
Forward Site

YES   NO

125

147

130

135

140

REQUEST

PUSH

BILLING

PROVISIONING
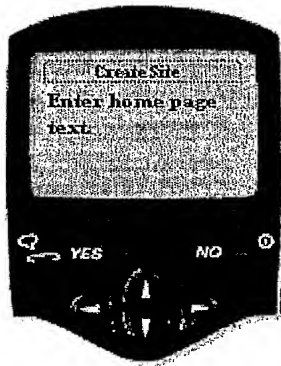
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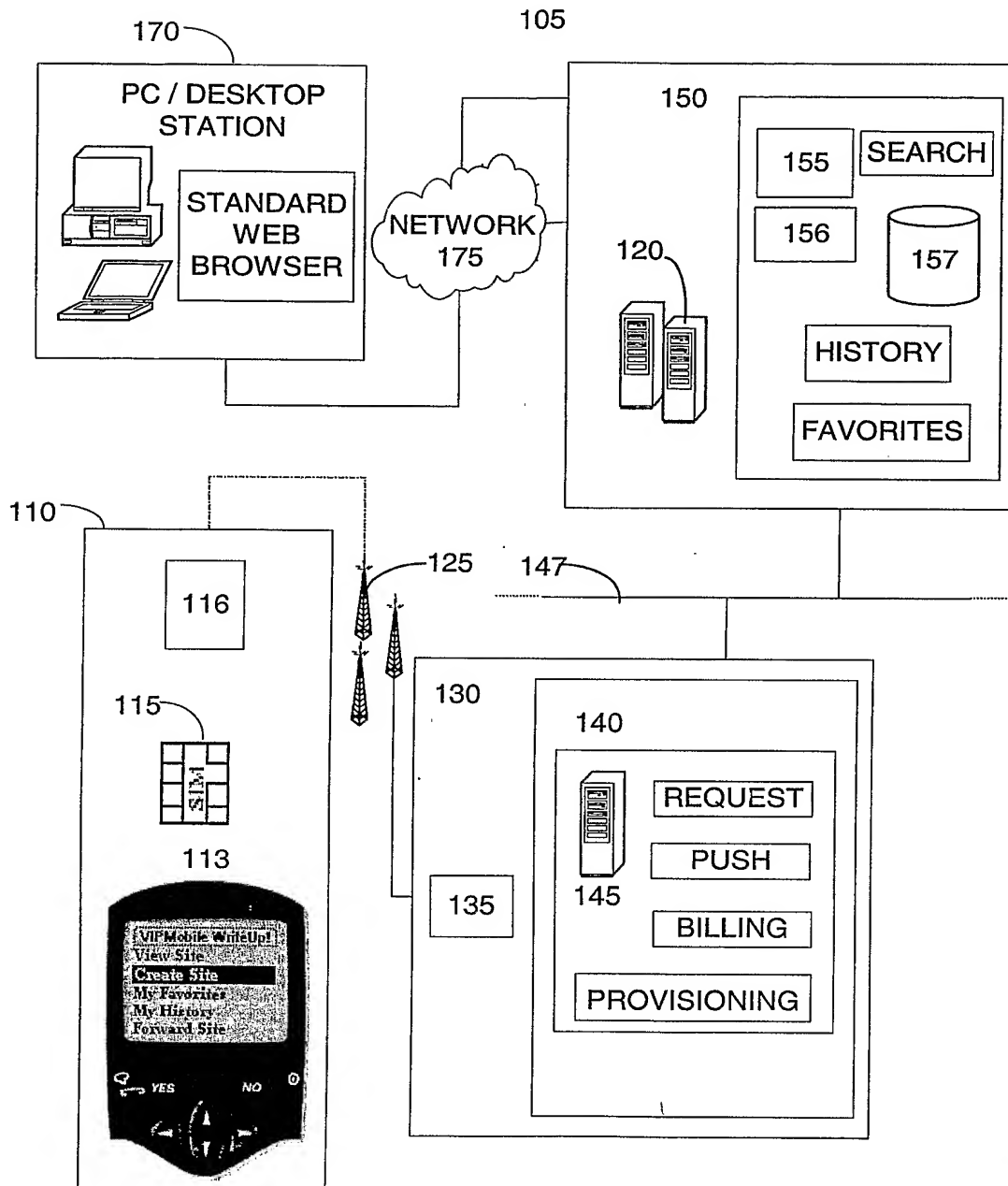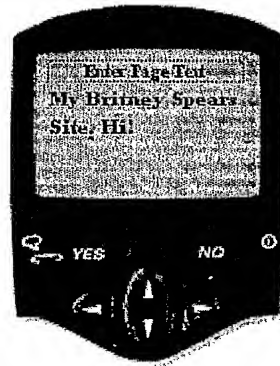
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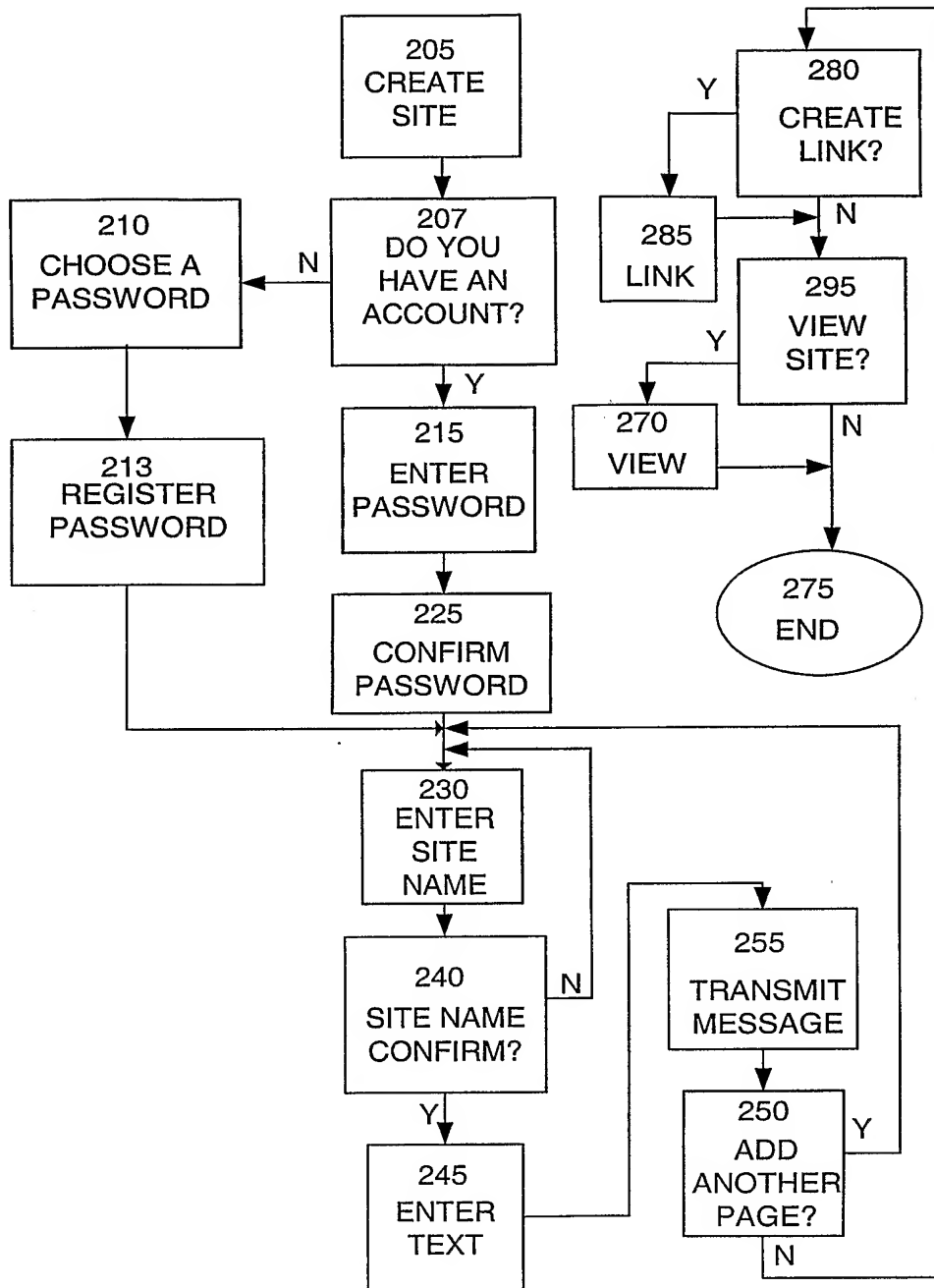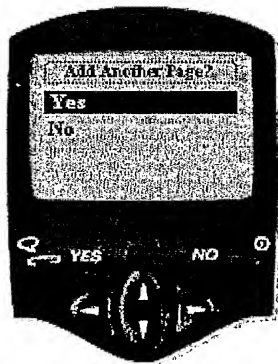
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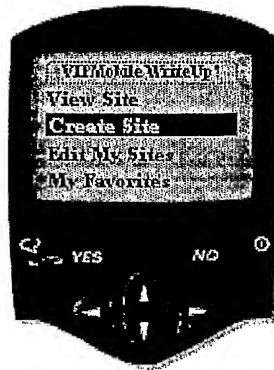
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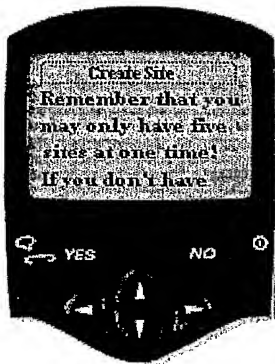
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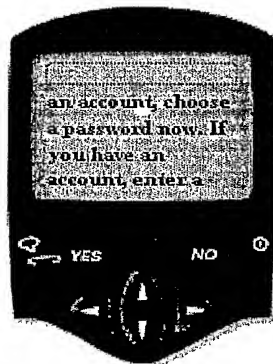
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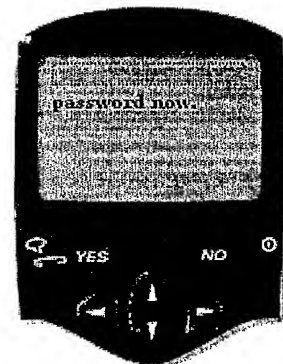
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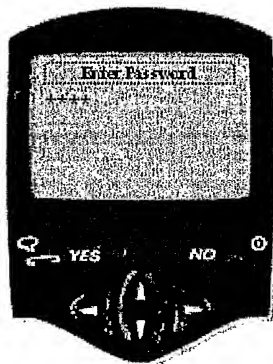
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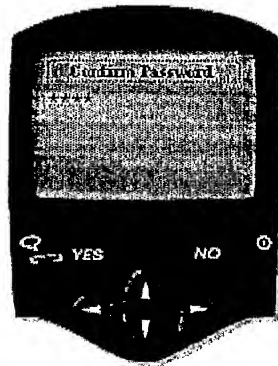
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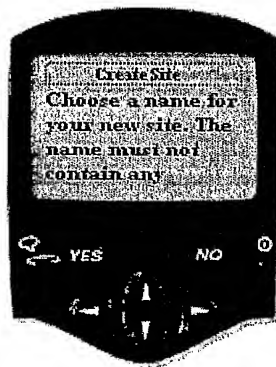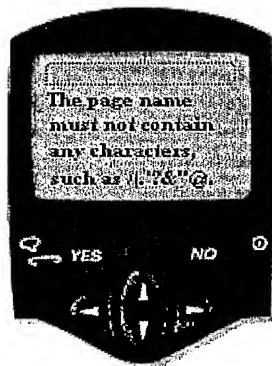

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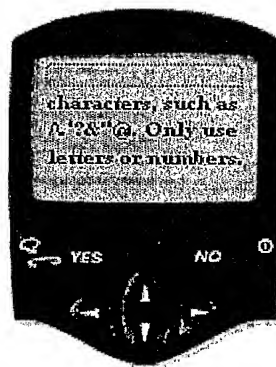
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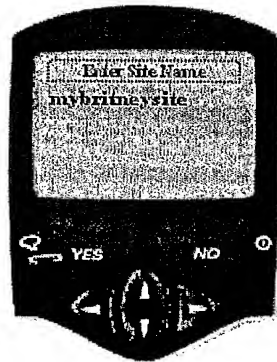
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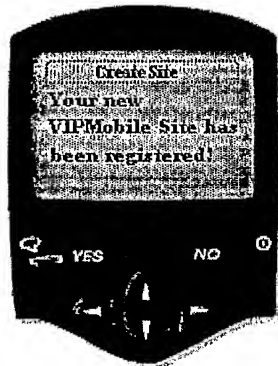
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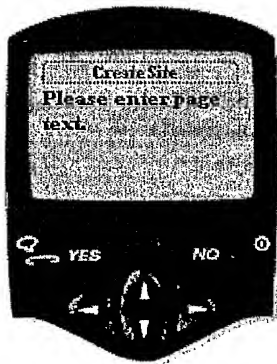545

547

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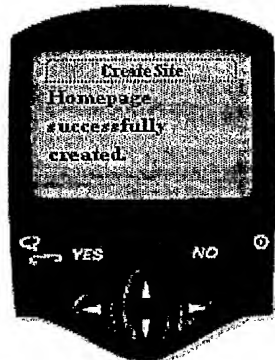
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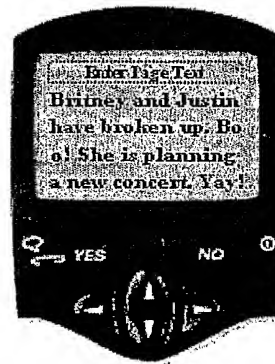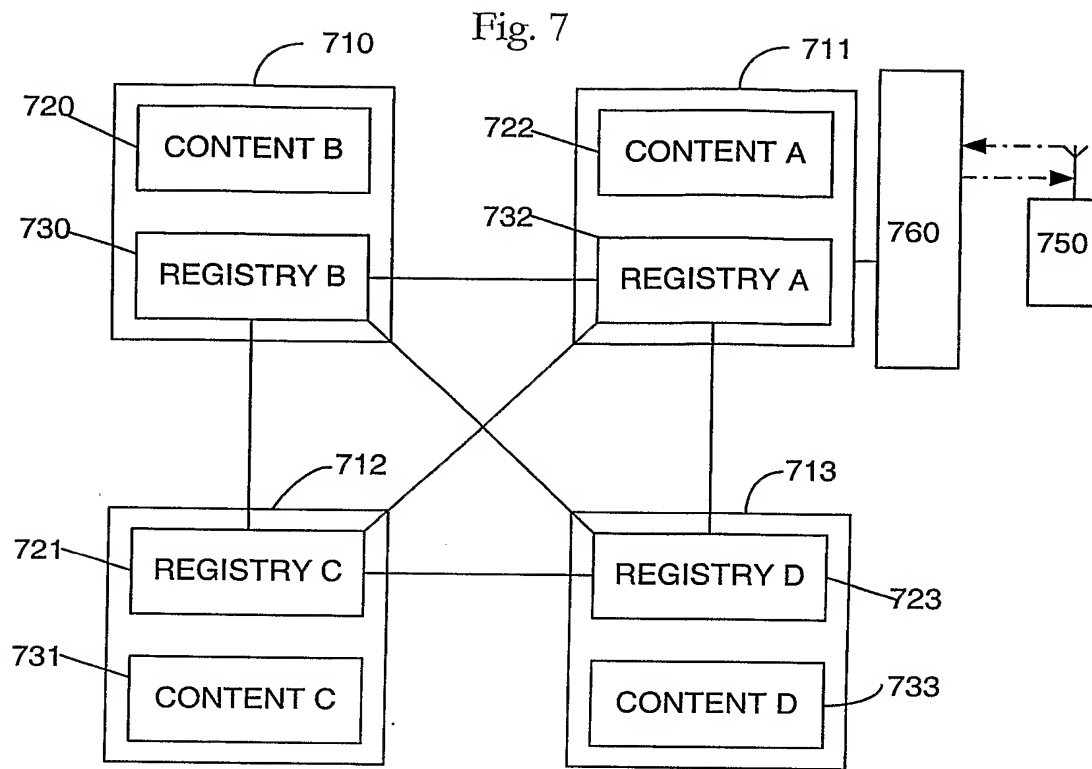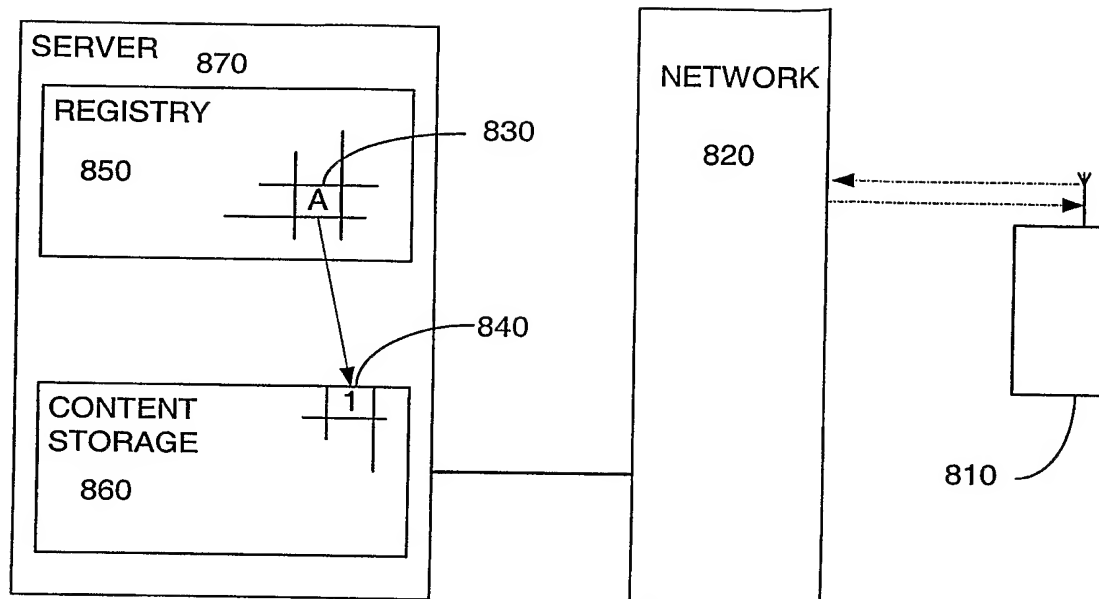

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Fig. 7
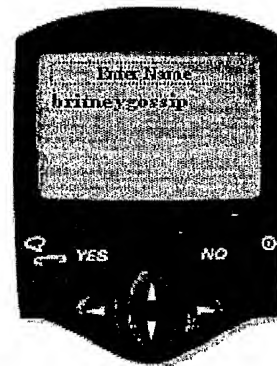
Fig. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/06327

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 15/16
US CL : 709/206, 219

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 709/206, 219

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,230,187 B1 (SUZUKI) 08 May 2001 (08.05.2001), column 1, line35 - column 2, line 30.	1, 16, 25, 41
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Y		2-5, 9-15, 17-23, 28-31, 35-40
Y	US 6,321,257 B1 (KOTOLA et al) 20 November 2001 (20.11.2001), column 4, line 40 - column 5, line 40., Fig 6	2-5, 9-15, 17-23, 28-31, 35-40
A,P	US 6,411,989 B1 (ANUPAM et al) 25 June 2002 (25.06.2002), whole document	6-8, 24, 32-34, 41-59

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance		
"E"	earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 July 2003 (31.07.2003)	**26 AUG 2003**
Name and mailing address of the ISA/US	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450	David A Wiley James R. Matthews
Facsimile No. (703)305-3230	Telephone No. (703)305-3900

Form PCT/ISA/210 (second sheet) (July 1998)